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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/412,085 10/04/99 MIZRAHI

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023552
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HM12/1219

EXAMINER

PRATS, F

ART UNIT

PAPER NUMBER

1651

DATE MAILED:

6
12/19/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/412,085

Applicant(s)

MIZRAHI ET AL

Examiner

Francisco C Prats

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

1. Claims 1-23 are presented for examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-20 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, the recitation "without similarly reducing the volume of lactate material" in claim 1 is confusing and therefore indefinite. It would appear that it is impossible to reduce the volume of the "source lactate material" without reducing the volume of "lactate material" since the two "materials" are the same exact solution. Also, it is not clear how much reduction is encompassed by the word similarly.

The confusion regarding this recitation can be overcome by amending claim 1 as follows: --

In claim 1, at line 5, delete the word "similar".

In claim 1, also at line 5, delete the second recitation of

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the word "volume" and insert in its place the word - concentration --. In claim 1 at line 6, delete the word "material".

Claim 1 is also indefinite because steps c and d do not follow logically or necessarily from previous steps. Specifically, steps c and d require formation and removal of calcium sulfate. However, step a clearly does not require the presence of calcium in the initial feedstock. Thus, it is confusing how one can remove calcium which is not present in the milieu.

Claim 12 is indefinite because it is not clear what compounds are encompassed by the term "polar organic enhancer" and what compounds are not. In sum, the metes and bounds of the quoted term are not clear.

Claim 14 is indefinite because of what appear to be commercial product names, "Alamine 304" and "IsoPar K", instead of recognized generic chemical nomenclature. Note specifically that product descriptions are subject to change such that a commercial designation is essentially meaningless. It is respectfully submitted that applicant must refer to the compounds using recognized chemical nomenclature. Applicant is also advised that if these terms are trademarks, then they should be capitalized wherever they appear and be accompanied by

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the generic terminology. Note that although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim 17 is indefinite because it is not clear how much a "minor amount" is.

Claim 22 is confusing grammatically in that it is not clear what process steps are required by the claim. The claim is also confusing in that there is no previous mention of a "gypsum filtration" step, or what steps are encompassed by such a filtration.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a),

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the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al (U.S. Pat. 4,771,001) in view of Lehnhardt et al (U.S. Pat. 5,426,219).

Bailey discloses a process of producing lactic acid from a fermentation broth. Specifically, Bailey acidifies a fermentation broth to pH 0.5 to 6.0, using an acid which may be sulfuric acid, followed by extraction with a tertiary amine, followed by back extraction into an aqueous medium, as recited in applicant's claims. See, e.g., cols. 10 through 14. Note specifically that Bailey discloses that various sugars as well as calcium salts can be present in the fermentation medium. See col. 6, line 54 through col. 7, line 14.

Thus, although he discloses some pre-extraction cell removal steps, Bailey differs from applicant's claims in that

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Bailey does not directly disclose pre-extraction steps of concentrating the feedstock, calcium sulfate removal, or removing larger molecular weight species. However, Lehnhardt clearly discloses such steps as being desirable in a similar process of preparing lactic acid by extracting an acidified fermentation broth. See Lehnhardt, at col. 5, lines 45-60, disclosing filtration of higher molecular weight species and concentration of the fermentation broth; see also col. 6, lines 16-22, disclosing the removal of salts crystallized as a result of acidification of the medium. Thus, the artisan of ordinary skill at the time of applicant's invention, clearly would have recognized from Lehnhardt the advantages of removing undesirable impurities including high molecular weight species and sulfate salts, as well as the advantage of concentrating the lactic acid-containing medium prior to extraction. The artisan of ordinary skill would therefore clearly have been motivated to have included Lehnhardt's pre-extraction purification steps in Bailey's extraction process. Thus, a holding of obviousness is clearly required.

Further still, the inclusion of sulfuric acid in the extractant is considered obvious since that step would be reasonably expected to maintain the required acidic pH in aqueous phase of the extraction milieu. Still further, the

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selection of known tertiary amines and co-solvents would have been a routine matter of selecting from among known equivalents of the extracting solvents disclosed in the references.

In sum, these claims fail to be patentably distinguishable over the state of the art discussed above. Therefore, the claims are properly rejected under 35 U.S.C. § 103(a).

7. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to F.C. Prats whose telephone number is (703) 308-3665.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael G. Wityshyn, can be reached on (703) 308-4743.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Communications applicant wishes to submit by FAX should be submitted to FAX # (703) 305-4242 or (703) 305-3014.

F.C. Prats
December 15, 2000



FRANCISCO C. PRATS
PRIMARY EXAMINER
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